

REMARKS

Claims 1 - 8 remain in this application. Claim 2 has been canceled and its limitations incorporated into claim 1, and claim 3 has been amended in response to the Examiner's requirement for correction. Non-elected claims 9-11 have been canceled in response to a previous restriction requirement, but without prejudice to Applicants' right to present such claims in one or more continuing applications. Favorable reconsideration of this application in view of these amendments and the following remarks is respectfully requested.

Turning to the Office Letter mailed January 5, 2006, the Examiner first objected to claims 2 and 3 on formal grounds. Amendments to remaining claim 3 along the lines proposed by the Examiner have been made, but without any change in scope being effected or intended. Withdrawal of the objections in view of these amendments is respectfully requested.

Claims 1 and 6-8 were rejected under 35 U.S.C. §102(b) as fully met by U.S. Patent No. 4,532,228 (Golino). Golino discloses coating a porous ceramic with a fugitive material. That rejection is respectfully traversed for the following reasons.

The Applicants' claims 1 and 6-8 relate to a process for coating a porous ceramic that requires the use of a thermally cross-linkable polymer and a cross-link promoter. As disclosed by the Applicants at paragraphs [0016]-[0017] and [0034] of the application, the use of a cross-link promoter to develop the cross-linked polymer coating is critical to the invention, being relied on to promote coating enrichment and a coating distribution that counters the tendency of subsequently applied ceramic washcoats to reduce the gas permeability of porous ceramic supports.

Golino fails to teach the use of a cross-link promoter or a cross-linkable polymer to coat a porous ceramic, and fails to disclose the step of heating a liquid-applied coating to cross-link the polymer on the ceramic substrate. The Examiner notes that Golino teaches the thermal "setting" of certain organic liquid coatings, but such setting does not inherently anticipate cross-linking with a cross-link promoter since, for example, in the absence of a cross-link promoter, heating may instead produce simple drying (solvent removal) or straight-chain polymerization. Cross-linking generally requires the development of covalent bonds linking one polymer chain to another.

Since Golino fails to disclose the application of coatings comprising a combination of cross-linkable polymers and cross-link promoters that will cross-link extensively on heating, the subject matter of claims 1 and 6-8 of the application is clearly not anticipated. Accordingly reconsideration and withdrawal of the rejection of those claims under 35 U.S.C. §102 are respectfully requested.

Claim 1 was next rejected under 35 U.S.C. §102(b) as fully met by published U.S. Patent Application No. 2002/0011439 (Blum). Claim 1 as now amended is directed to a coating method employing ~~a~~ water-soluble, thermally cross-linkable polymers not shown in Blum. Accordingly claim 1 as amended is not fully met by Blum, and therefore reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. §102 on reference to Blum are respectfully requested.

The Examiner next rejected claim 2 of the application under 35 U.S.C. §103 as unpatentable over U.S. Patent No. 5,460,854 (Krug) in view of Golino. Krug was cited to show the strengthening of a ceramic via water-soluble resin impregnation.

The Applicants' claim 1, which presently incorporates the limitations of claim 2, relates to a process requiring the use of a polymer solution including a cross-link promoter as well as a cross-linkable polymer. Further, the ceramic article to which the solution is applied must be heated to a temperature sufficient to not only remove the vehicle but also to cross-link the polymer.

The Examiner has recognized that there is no cross-linker in Krug. Accordingly the Examiner relies on Golino to supply the missing elements, but as is evident from a reading of Golino and the foregoing remarks regarding Golino above, there is no teaching in Golino to use a cross-link promoter either. Further, Golino, as well as Krug, are both absent any teaching to heat the applied solutions to insure cross-linking of the applied polymers.

For the above reasons it is respectfully contended that the combination of Krug and Golino does not establish a prime facie case of obviousness with respect to the subject matter of claim 2 (canceled) or claim 1 as amended. Accordingly, favorable reconsideration of claim 1 and allowance of that claim over the combination of Krug and Golino are respectfully requested.

Finally, the Examiner has rejected claims 3-5 of the application under 35 U.S.C. §103 as obvious and unpatentable over Krug taken with Golino further in view of U.S. Patent No. 3,784,649 (Buckman) and U.S. Patent No. 4,765,867 (Dreisbach). That rejection is also respectfully traversed, for the following reasons.

Buckman simply discloses the preparation of high molecular weight ionenes. The Examiner points to a teaching of equivalency between ionenes and polyacrylamides at column 1, lines 31-52 of that patent; however, the Buckman teaching is only as to the utility of both ionenes and polyacrylamides in papermaking and for treating industrial effluents (column 1, lines 40-44). There is no suggestion of equivalence for other applications. Dreisbach is similarly deficient as to other ionene applications, in that the discussion of ionenes and amine-functional ionenes is in context of the papermaking arts.

Krug requires a polymer that will strengthen porous ceramic investment casting cores, and ionenes are not among the polymers disclosed as useful for that purpose. It is therefore apparent that neither Buckman nor Krug teaches the equivalence of ionenes and polyacrylamides for ceramic strengthening or other ceramic coating applications, and that neither of Buckman or Dreisbach directly suggests ionene utility for that purpose.

In light of these facts, the conclusion that these references establish the "exchangeability" of ionenes for polyacrylamides in ceramic strengthening or other ceramic coating applications is not adequately supported by the references. Accordingly it is respectfully submitted that no prima facie case of obviousness has been established to support the rejection of claims 3-5 of the application under 35 U.S.C. §103, and therefore that rejection of those claims as unpatentable over Krug taken with Golino Buckman and Dreisbach should be withdrawn.

In light of the foregoing amendments and remarks, the Applicants respectfully submit that the remaining claims of this application are now in condition for allowance. Accordingly favorable reconsideration of this application and the issuance of a Notice of Allowance herein are courteously solicited.

The Applicants submit that no extension of time is necessary to make this Reply timely, but contingently request that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as is necessary to make this Reply timely, if in fact such an extension is

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required. In that contingency the Office is hereby authorized to charge any necessary extension fee or surcharge to the deposit account of Corning Incorporated, Deposit Account 03-3325.

Respectfully submitted,



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